

REMARKS/ARGUMENTS

Claims 1, 2 and 6-10 are currently pending in this application, as amended. By the present amendment, claim 1, 2, 6 and 8 have been amended, and claims 3-5 have been canceled. Applicants submit that no new matter has been introduced into the application by the present amendments.

Claim Rejections – 35 U.S.C. §112

In the Action, the claims were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, in claim 1 a question was raised with respect to the phrase "unbroken weft path." In response claim 1 has been amended to more specifically recite that the first and second members of each pair of intrinsic weft binders form a single combined weft path in both the PS layer and MS layer. The original phrase "unbroken weft path" has been deleted, but was intended to refer to the specific configuration of two weft binder yarns forming a single combined weft path in both the PS and MS layers.

Claims 2-5 were also rejected due to inclusion of the term "preselected". In response, this term has been removed in claim 2 and claims 3-5 have been canceled.

In claims 6-8, the reference to the "heat setting process" was questioned as whether it was required as part of a processing step or whether the properties were possessed if the fabric was subjected to a heat setting process. In response, the reference to "heat setting process" has been removed from these claims such that the fabric having the recited properties is claimed. With respect to the question regarding the air permeability in claims 7 and 8, claim 8 has been clarified to recite the required air permeability being in a range of cubic feet per minute per square foot, and is therefore consistent with claim 7. Applicants note that air permeability with respect to fabrics must be specified in terms of a defined area or else the property could be achieved by any fabric by merely varying the area that is tested.

Claim Rejections – 35 U.S.C. §103

(1) Claims 1 - 6 and 9 based on US 6,349,749 in view of either US 4,376,013 or US 5,555,917

In the action, claims 1-6 and 9 were rejected under 35 U.S.C. §103 as obvious over US 6,349,749 to Quigley, in view of either US 4,376,013 to Wang or US 5,555,917 to Quigley (Quigley # 2).

Applicants respectfully submit that amended Claim 1 is not obvious from any combination of these cited references, for the following reasons:

Quigley discloses a yarn arrangement to be used at the seam area of a base fabric for a press felt. The Quigley fabric structure is well known in the art, and is not in itself novel; but instead the patent is directed at a seam structure for such known fabrics, by providing additional yarns in the seam area, to reduce slippage of the CD yarns adjacent the pintle, which is a significantly different field from the subject matter of the present invention. Quigley does not teach or remotely suggest a fabric for a through-air drying process.

Quigley discloses an endless woven fabric structure. In the art of paper machine fabrics, in those which are flat woven the warp yarns are oriented in the machine direction when in use and the weft yarns are oriented in the cross-machine direction. In endless woven fabrics, typical of press felt fabrics, and such as the Quigley fabric, following the usual weaving, processing and seaming steps, the yarns which are woven as weft yarns are oriented in what will be the MD of the finished fabric, and the warp yarns are oriented in what will be the CD. The fabric structure illustrated in the Quigley disclosure shows the weft yarns forming the seaming loops which are thus MD oriented. For example, Figure 2 of Quigley, which is reproduced on the cover page of the patent, shows stacked weft yarns interwoven with the warp yarns.

In the structure of Quigley, unlike the TAD fabric of the present invention, there is no dedicated PS and MS warp. Referring to Fig. 2 of the present invention, the warp 1 – 16 are clearly stacked so as to be located on solely either the MS or the PS and are

interconnected by means of the weft which form part of the PS and part of the MS. The MD weft yarns of Quigley which form the seam loops are located on both the PS and MS, but the stacked PS and MS weft yarn is the same yarn. For example, the PS weft 21 interweaves with the warp yarns (which are not stacked), forms a seam loop, and then interweaves again with the warp yarns to form the MS weft path. The cross section shown in Fig. 2 is highly misleading in that regard because the “stacked yarn pairs” to which the Examiner refers, e.g. wefts 17 & 18, 19 & 20, etc are in fact the same yarn.

Thus, the CD weft yarns of Quigley e.g. 21, 22 and 23, 24 do not form an intrinsic weft pair as they do in the present invention. Each member of an intrinsic weft pair will replace the other in their combined path through one surface e.g. the PS so as to form a continuous, unbroken weft path. Referring to e.g. Fig. 1a and Fig. 4 in Quigley, these show successive warp yarns interwoven with the weft, but they are not intrinsic as that term is defined. The same is true for the weft yarns shown in these same two figures 1a and 4. In contrast, in the fabric shown in Fig. 1 of the present application, it can be clearly seen that as one weft passes down to the MS to interweave with the lower layer of warp, the other weft of the pair passes up to the PS and continues the path of the first in the PS.

As is further confirmed by Claim 1 of Quigley, in requiring that the “. . . MD yarns extending beyond endmost of said CMD yarns at opposed first and second ends . . .” form seaming loops, this reference is directed at a pin seam for an endless woven fabric for use as a press felt; and does not teach or suggest the fabrics of the present invention, which have a non-marking woven seam similar to that in forming fabrics.

The Examiner has not relied on either of the other references cited in relation to Claim 1, except in relation to polymeric materials. Quigley # 2 is equally directed to fabrics in which there are no intrinsic weft binder yarns; and the warp yarns are not stacked. The stacked yarns are weft yarns, for example 104, 112 in Fig. 3. Wang teaches the use of coatings for yarns.

In view of the important differences between the features of the present invention as defined in amended Claim 1 submitted herewith, and the teachings of Quigley, Claim 1 cannot be regarded as obvious from Quigley, or any combination with either Quigley #2 or Wang.

Applicants respectfully submit that the teachings of these three references cannot be combined in any manner which would lead the person skilled in the art to the present invention, as defined in any of Claims 1 to 6 and 9, and accordingly this rejection should be withdrawn.

(2) Claims 7, 8 and 10 based on US 6,349,749 in view of either US 4,376,013 or US 5,555,917, and further in view of US 4,921,750 or US 5,496,624

Claims 7, 8 and 10 were also rejected under 35 U.S.C. is obvious §103 as obvious over US 6,349,749 to Quigley, in view of either US 4,376,013 to Wang or US 5,555,917 to Quigley (Quigley # 2), or further in view of US 4,921,750 to Todd or US 5,496,624 to Stelljes. Applicants traverse this rejection.

For the reasons discussed above, Claim 1 is not obvious in light of any of Quigley, Wang and Quigley #2; and as each of Claims 7, 8 and 10 is ultimately dependent on Claim 1, none of these claims can be regarded as obvious from these three references, or the additional references of Todd and Stelljes.

In this rejection, the Examiner asserts that Todd and Stelljes each teach an air permeability which could be combined with the teachings of one or more of the other cited references to lead to the present invention. However, air permeability is a property which is a feature resulting from a fabric structure, i.e. it is not a “structure” in itself such as can be combined with other structural features. It is not feasible simply to look to the prior art “to use an air permeability in the range ...”, as suggested by the Examiner. There is no teaching in any of the references which indicate any manner in which the weave patterns of Todd could be combined with the patterns

taught by Quigley or any other reference, in order to impart this air permeability property to a fabric of such other reference.

Applicants therefore respectfully submit that claims 7, 8 and 10 are not obvious in view of any combination of any of the cited references, and withdrawal of this rejection is respectfully requested.

(3) Claims 1 - 10 based on US 4,921,750 in view of either US 4,376,013 or US 5,555,917

In the Action, claims 1- 10 were rejected under 35 U.S.C. §103 as obvious over US 4,921,750 to Todd in view of either US 4,376,013 to Wang or US 5,555,917 to Quigley #2. Applicants respectfully submit that amended Claims 1, 2 and 6-10 now clearly distinguish the present invention from the teachings of each of these references, alone or in combination.

Todd discloses a TAD fabric in which the yarns in the two layers of warp are vertically stacked, and are interwoven by means of the weft 1 – 6. However, in this fabric, the weft are not arranged as intrinsic weft yarns; there is no teaching in the reference of the use of weft yarns as intrinsic pairs in the manner of the present invention, to form a single combined weft yarn path. Further, in Claim 1 as now amended, the additional feature of the use of a plain weave pattern in at least one of the paper side layer and the machine side layer is clearly not taught or suggested by Todd. This feature, discussed at paras. [0022] and [0023] of the present application, together with the use of intrinsic weft yarns pairs and stacked warp yarns, provides a stability to the fabrics of the invention, which is simply neither taught nor suggested in Todd.

The other two references, Quigley # 2, and Wang, were cited respectively in relation to the use of polymeric materials and coatings. Applicants submit that having regard to the significant differences between Todd and the present invention, neither of these references can be regarded as capable of being combined, alone or together, with

the teachings of Todd, to lead the person skilled in the art directly to the present invention.

As each of Claims 2 and 6 to 10 is dependent on Claim 1, none of the amended claims submitted herewith can be regarded as obvious from Todd, alone or in combination with either Quigley # 2 or Wang, and withdrawal of this obviousness rejection is respectfully requested.

CONCLUSION

If the Examiner believes that any additional minor formal matters need to be addressed in order to place the present application in condition for allowance, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing Amendments and Remarks, Applicants respectfully submit that the present application, including claims 1, 2 and 6-10, is in condition for allowance, and a Notice to that effect is respectfully requested.

Respectfully submitted,

Stone et al.

By___/Randolph J. Huis/____
Randolph J. Huis
Registration No. 34,626
(215) 568-6400

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103

RJH/dmm